

Evaluating the World Infrared Standard Group

A field campaign to assess potential changes to the WISG

IPs: Ibrahim Reda, Julian Gröbner , Chuck Long, Emiel Hall, Joseph Michalsky, Allison McComiskey

**SGP Radiation
Calibration Facility**



What: the goal is to determine whether the next improvement in infrared radiometry uncertainty can be made with confidence based on comparisons of two independently developed absolute instruments: IRIS and ACP

Where: ARM Southern Great Plains Site

When: Fall 2017 (~ 4 weeks available starting early October)

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Phillipona et al. 2001

World Infrared Standard Group
Maintained in Davos, Switzerland World Radiation Center
Four pyrgeometers calibrated by **Absolute Sky-scanning Radiometer (ASR)**
All ARM Eppley PIRs calibrated by WISG

Infrared Integrating Sphere (IRIS) Gröbner et al. 2012

Absolute Cavity Pyrgeometer (ACP) Reda et al. 2012

IRIS-ACP agreed within $\sim 1 \text{ Wm}^{-2}$
WISG 2-5 Wm^{-2} lower depending on the water vapor column

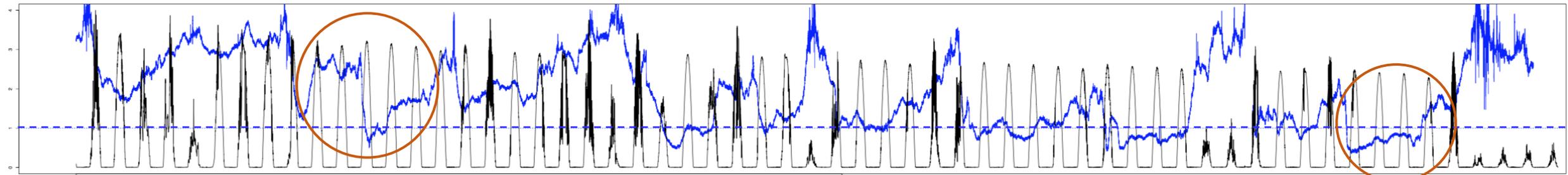


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- ✦ ACP, IRIS, and 2 instruments calibrated to WISG (ASR not available)
- ✦ 4 weeks in fall at SGP
- ✦ Range in water vapor desired ($PWV < 1 \text{ cm} < PWV$)



■ PWV (cm)
■ GHI



OCT

NOV

DEC

NPC – NREL
25 Oct-6 Nov

PMOD out
30 Oct-Nov 10